

Momentum

- 1.-
2. Formula-
3. How is momentum like velocity?
4. Law of Conservation of Momentum
 - A. When a moving objects hits another object what two things can occur?
 - B. This law states that-
 - C. Give an example:
 - D. This law applies-
 - E. Objects sticking together
 1. The mass-
 2. They move-
 3. Their velocity-
 4. Example:
 - F. Objects Bouncing Off Each Other
 1. The momentum is-
 2. The collision causes the objects to move-
 3. The transfer of momentum causes the objects to move-
 4. Example:
 - G. Conservation of Momentum and Newton's Third Law
 1. Example:
 2. Explain how action and reaction forces effect momentum.

Momentum Problems

Remember **Momentum = Mass x Velocity**

- 1.) How much momentum does a 25 kg mass moving at 25 m/s have?
- 2.) How much momentum does a stationary 5500 kg mass have?
- 3.) What is the velocity of a 5.5 kg object that has a momentum of 550 kg·m/s?
- 4.) Compare the momentums of a 50 kg dolphin swimming at 16.4 m/s and a 4100 kg elephant walking 0.20 m/s.
- 5.) An object has a momentum of 55 kg·m/s and hits a stationary object making the second object starts to move. If the first object ends with a momentum of 13 kg·m/s, what is the momentum of the second object?
6. Calculate the momentum of a 0.15 kg ball that is moving toward home plate at a velocity of 40m/s.
7. Which has greater momentum, a 2.0kg hockey puck moving east at 2.5m/s or a 1.3kg hockey puck moving south at 3.0m/s?
8. A track athlete throws a 2kg discus into a field with a velocity of 21m/s. What is the momentum of the discus?
9. Calculate the momentum of a 700g ball that is rolling down a ramp at 4.6m/s.
10. A cannon fires a 40.5kg shell toward a target and the shell moves with a velocity of 120m/s. Calculate the shell's momentum.